

REVIEW AND APPROVALS

WALLKILL RIVER NATIONAL WILDLIFE REFUGE

Sussex, New Jersey

ANNUAL NARRATIVE REPORT
Calendar Years 1995 and 1996

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U.S. Department of the Interior
Fish and Wildlife Service
NATIONAL WILDLIFE REFUGE SYSTEM

INTRODUCTION

The Wallkill River National Wildlife Refuge (refuge) was established on November 16, 1990 by authorizing legislation P.L. 101-593 Sec. 107 of H.R. 3338. The refuge has an approved acquisition boundary which surrounds 7,500 acres along the Wallkill River, one of the few north flowing rivers in the world. It is situated predominately in northwestern New Jersey with parcels in Vernon, Wantage and Hardyston Townships of Sussex County, New Jersey and the Town of Warwick in Orange County, New York. Acquired lands totaled 2,693.96 acres by the end of 1995 and 2,933.79 acres by the end of 1996.

The refuge was established: 1) to preserve and enhance the refuge lands and waters in a manner that will conserve the natural diversity of fish, wildlife, plants, and their habitats for present and future generations; 2) to conserve and enhance populations of fish, wildlife, and plants within the refuge, including populations of black ducks and other waterfowl, raptors, passerines, and marsh and water birds; 3) to protect and enhance the water quality of aquatic habitats within the refuge; 4) to fulfill international treaty obligations of the United States with respect to fish and wildlife and their habitats; and 5) to provide opportunities for compatible scientific research, environmental education, and fish and wildlife-oriented recreation.

The refuge lies within two physiographic provinces – the Appalachian Ridge and Valley Province on the west and the Highlands on the east. The Wantage and Vernon terrains vary from the relative flatness of river floor at an elevation slightly less than 400 feet above mean sea level to mountain peaks and ridges in excess of 1,400 feet in elevation. Much of the refuge is either riverine floodplain or rolling hills. The elevations along the western refuge boundary in Wantage Township range between 500 and 650 feet. The refuge in Vernon is more mountainous as Pochuk Mountain transects the town in a northeast-to-southwest direction. The terrain steepens rapidly from the river bed to 1,100 feet above mean sea level along Pochuk Mountain.

The refuge will protect 4,200 acres of freshwater wetlands and 3,300 acres of adjacent upland when acquisition is complete. Wetland habitat types include 1,600 acres of palustrine forest, 1,500 acres of emergent marsh, 600 acres of wet meadow, 400 acres of scrub-shrub marsh, and 100 acres of open water. Upland habitat types include 2,500 acres of agricultural land and 800 acres of hardwood forest.

The bog turtle, proposed for listing as a threatened species under the Federal Endangered Species Act, is found in at least two locations on the refuge and has the potential to be found on several additional locations within the refuge's approved acquisition boundary. The bald eagle and the peregrine falcon are occasionally seen on the refuge.

The Wallkill River bottomlands are unique in the large number (19) of New Jersey State-threatened and endangered species utilizing the area. Few areas in the northern part of the

State harbor such a large concentration of species in need of protection. Confirmed State-listed species found within the refuge include the short-eared owl, barred owl, red-shouldered hawk, Cooper's hawk, northern harrier, savannah sparrow, sedge wren, bobolink, great blue heron, wood turtle, and bog turtle. The refuge also offers excellent potential to support breeding and migrating osprey, a threatened species in New Jersey.

Five of the 72 fish and wildlife species designated by the Service as National Resource Plan species also occur within the refuge boundaries. These are the black duck, wood duck, mallard, American woodcock, and great blue heron. Thirteen species of migratory nongame birds of management concern in the northeast (U.S. Fish and Wildlife Service, 1992) are found at some time during the year on the refuge as well.

The Wallkill River bottomlands are one of the few large areas of high quality waterfowl habitat remaining in northwestern New Jersey. During migration, this area attracts large numbers of waterfowl including black ducks, mallards, green-winged teal, blue-winged teal, wood ducks, Canada geese, common mergansers, and hooded mergansers. Extensive nesting habitat is provided for the wood duck, mallard and Canada goose. Other waterfowl species, including the black duck, can nest on the refuge, but in much lesser numbers.

The refuge straddles two major migration corridors for waterfowl moving between eastern Canada and the Atlantic coast, and the Delaware River and Hudson River corridors. Waterfowl from both corridors stop to rest and feed in the extensive wetlands along the Wallkill River. These migration corridors are particularly important to the black duck.

A number of colonial water birds are found on the refuge, although only great blue heron and green heron are common. The flooded areas of the refuge, such as the bottomland shallows and marshes, provide feeding, nesting and resting areas for these aquatic feeders.

A great variety of game and non-game birds, mammals, reptiles and amphibians inhabit the refuge. White-tailed deer, wild turkey, beaver, mink, muskrat, raccoon, red fox, gray fox, coyote, and black bear are common species. Bobcat, otter, and ruffed grouse are found on the refuge but are not common.

The Wallkill River itself is an excellent warmwater fishery for largemouth bass, smallmouth bass, pickerel, perch, channel catfish, bullheads and sunfish.

1995 - 1996 ANNUAL NARRATIVE REPORT

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A. HIGHLIGHTS

Elizabeth “Libby” Herland became the refuge’s second manager on January 30, 1995.

Lamar Gore began his Cooperative Education appointment on June 1, 1995. Lamar was the first Coop student at the refuge. He initiated the first official research project on the refuge.

Office Assistant Julie Reid’s last day on the refuge was June 23, 1995. She accepted a position with the National Institutes of Health in Washington, D.C.

Refuge staff initiated a habitat restoration project on a former sand and gravel mine on property purchased in early 1995.

The refuge initiated a haying program on the refuge, working with local farmers.

The refuge received boundary approval from the Migratory Bird Conservation Commission (MBCC) for the acquisition of wetlands using Migratory Bird Conservation Fund (MBCF) monies.

Refuge staff wrote grant applications and received funding for the Liberty Sod Farm restoration project from the National Fish and Wildlife Foundation, Ducks Unlimited, and the Service’s Challenge Grant program.

The first community meeting, held in July 1995, was attended by over 125 people.

Terry Mitchell transferred from John Heinz NWR on May 6, 1996. Terry was the first maintenance worker on the refuge.

Biological control of purple loosestrife on the refuge began with the first release of *Galerucella* beetles on the refuge.

The refuge hosted a Russian delegation of reserve managers and defense ministers as part of a northeast tour organized by Steve Kohl of the Service’s Office of International Affairs.

B. CLIMATIC CONDITIONS

The extreme weather conditions of 1993 and 1994 continued in 1995. January was atypically snowless, and February's 13 inches of snow came in one storm. The summer was a three month long, hot drought with normally flowing streams completely dry, and a high temperature in July of 108 degrees Fahrenheit! The same streambeds that had been completely dry were then hidden by floodwaters when 9.21 inches of rain fell in October! Eleven inches of snow fell in November, a month which usually has little to no snowfall recorded. December left the refuge with an additional 27 inches of snow.

TABLE 1. TEMPERATURE AND PRECIPITATION TOTALS FOR 1995					
Month	High (Fahrenheit)	Low (Fahrenheit)		Precipitation (Inches)	Snow (Inches)
January	62	4		4.10	1
February	52	-3		0.91	13
March	75	13		1.26	0
April	76	17		2.27	0
May	87	32		2.59	0
June	98	48		1.98	0
July	108	48		2.87	0
August	96	46		1.82	0
September	90	34		3.10	0
October	84	32		9.21	0
November	66	8		4.35	11
December	50	2		0.00	27
Annual High/Low	108	-3	Totals	34.46	52

1996 was another year of weather ups and downs. Over half of the annual snowfall was recorded in January. On January 7-8, 28 inches of snow fell in just 24 hours. This became known as the "Blizzard of '96". The force of the blizzard was such that all of New Jersey and southeastern New York were in a declared state of emergency. March temperatures fluctuated drastically, with a high of 64 and a low of 0. After a fairly dry spring, June was unusually wet, with over 6 inches of rain. The summer proved wet and mild, a nice contrast to the summer of 1995. December brought only 6 inches of snow, but over 7 inches of rain.

TABLE 2. TEMPERATURE AND PRECIPITATION TOTALS FOR 1996					
Month	High (Fahrenheit)	Low (Fahrenheit)		Precipitation (Inches)	Snow (Inches)
January	56	-4		4.22	48
February	62	-6		1.16	13
March	64	0		1.46	18
April	82	22		3.71	1
May	96	24		6.32	0
June	90	42		5.47	0
July	86	53		4.46	0
August	88	52		2.47	0
September	85	40		3.71	0
October	72	26		6.11	0
November	68	10		2.35	2
December	58	12		7.45	6
Annual High/Low	96	-6	Totals	48.49	88

C. LAND ACQUISITION

1. Fee Title

The refuge has an approved acquisition boundary of approximately 7,500 acres. The first parcel was acquired on January 16, 1992. To date, all refuge lands have been acquired through simple fee title.

On January 1, 1995, the refuge encompassed 2,468.5 acres. During 1995 and 1996, an additional 469.3 acres were acquired. The refuge encompassed 2,937.8 acres on December 31, 1996.

TABLE 3. LAND ACQUISITION TOTALS BY YEAR		
CALENDAR YEAR	ACRES ACQUIRED	CUMULATIVE ACREAGE
1992	1,086.7	1,086.7
1993	487.6	1,575.3
1994	894.2	2,469.5
1995	225.5	2,695.0
1996	243.8	2,938.8

Congress appropriated \$1,797,000 from the LWCF in FY1995 and \$1,000,000 from the LWCF in FY1996 for refuge land acquisition. Through 1995, all purchase monies for the refuge had derived from the Land and Water Conservation Fund.

During the spring of 1995, RM Herland developed the documentation that was submitted by the Regional Realty Officer to the Migratory Bird Conservation Committee (MBCC) in September 1995 to allow Migratory Bird Conservation Fund (MBCF) monies to be used to acquire wetlands within the approved acquisition boundary. That approval was received in October 1995, and 4 tracts totaling 128 acres were submitted and approved for MBCF funding. These lands were tracts 30 (Fischer), 33 (Belcher), 34 (Brown), and 36 (Murray). All were forested wetlands located along the abandoned Lehigh and New England railroad bed south of Kelly Road in Vernon, NJ. In 1996, the MBCC approved \$922,000 to acquire 406 acres of wetlands along the Wallkill River on tract 15 d,e (Van Althuis) and forested wetlands on tract 43 (J. Cosh) along the abandoned railroad bed south of Kelly Road. These latter lands were subsequently acquired in 1997.

Two parcels were added to the refuge boundary by categorical exclusion: Tract 117, a 9-acre parcel in Warwick, NY owned by Walter Siematkowski and Tract 118, a 34-acre parcel

on Lake Wallkill Road owned by Mildred Van Vliet. This brought the acreage of land added to the refuge acquisition boundary by categorical exclusion to 128.44 out of a possible 750 acres.

Lands acquired in 1996 with MBCF monies included the Tract 118 (Van Vliet), Tract 87 (Hlavacek) and Tract 88 (Willson).



View of Tract 88 property looking east from railroad bed. *L. Herland 4/95*

Much of RM Herland's time was spent on land acquisition. A recap of acquisition efforts follows:

Tract 7 (Vernon Township): RM Herland worked with Vernon Township to transfer a 36-acre hemlock and forested wetland parcel at no cost to the Service in compensation for their unauthorized construction of a road on Green Acres-funded property elsewhere in town. RM Herland worked with township manager Richard Sheola. Unfortunately, the transfer never took place because NJ Green Acres required the inclusion of language in the deed that Regional Solicitor Tony Conte found unacceptable to the Federal government.

Tract 23 (Van Althuis): In February 1995, RM Herland notified the Trust for Public Land that the farmhouse and farm buildings located on this property were potentially very suitable for refuge operations. It was immediately obvious that acquisition of this parcel would significantly increase public awareness, community support and opportunities for Sussex County residents and visitors to enjoy the refuge if the farmhouse was converted to a permanent refuge headquarters. Over the next two years, refuge staff worked closely with Realty Specialist Will Waldron and Norbert Turek of the Trust for Public Land to acquire this property.

Tract 29 (Trapani): RM Herland spoke with Sal Macri, the owner's son, about this property. The parcel has uplands and wetlands and is buildable according to Mr. Macri. However, the property has no road frontage. It appears that the legal access to the site is not well defined. An appraisal was conducted and an offer made. The offer was rejected because the owners believe the Service undervalued the property. This property has not been purchased to date.

Tract 30 (Fisher): RM Herland spoke with the owner about the appraisal and received information about the property, a forested wetland, for the Migratory Bird Conservation Commission meeting. This property was purchased in 1995.

Tract 34 (Brown): RM Herland worked with Margery Brown to secure MBCF monies for the acquisition of her property. This is a former vegetable field adjacent to the abandoned railroad bed off Kelly Road and behind Stratfordshire Drive. A beaver dam on the property is keeping this site pretty wet. This property was purchased in 1995.

Tract 40 (Ivkovic): RM Herland visited this site with Dave Kiernan, an appraiser in the Regional Office, on March 5, 1996 and met with the landowner, who is unsuccessfully trying to grow black walnuts on his property.

Tract 43 (Cosh): RM Herland spoke with John Cosh on February 10, 1995 about land acquisition and notified the Realty Office of the landowner's interest in selling their property to the refuge. RM Herland walked the property with Mr. Cosh on August 30, 1995. The property contains forested wetlands, grasslands, and upland forests.



View of Tract 43 (Cosh farm) from Lake Wallkill Road. *FWS photo*

Tract 44 (Karasik): RM Herland met with William Karasik on December 8, 1995 about legal access to his property off the abandoned Lehigh and New England railroad bed, rights-of-

way, and possible purchase. This property is a forested wetland with access through other private land. Mr. Karasik thinks he can timber and mine the property and that it is worth \$5,000 an acre. This property has not been purchased by the Service to date.

Tract 47 (Paling): This property went on the market in the summer of 1995, but owner Marjorie Paling indicated she was interested in selling the parcel to the refuge. The property was appraised and she rejected the offer.

Tract 50 (Mt. Bethel Humus Company): RM Herland called Realty Specialist Will Waldron to ask him to approach the owners of this 150-acre property to see if they might be interested in selling their land to the refuge. This property was the subject of a wetlands permit application and enforcement actions related to unauthorized soil removal.

Tract 53 (Wesloske): RM Herland met with members of the Wesloske family about the sale of their property to the refuge. They want to include a 12-acre parcel on Owens Station Road. Completed paperwork amend the boundary to include this parcel. This property has not been purchased to date. The old schoolhouse near the junction of Owens Station Road and Lake Wallkill Road is maintained by the Vernon Historical Society.

Tract 55 (Myslinski): ROS Robichaud provided Alice Myslinski with information about the refuge and land acquisition. On August 15, 1996, RM Herland met with Mrs. Myslinski to discuss the possible purchase of this property and to inspect the structure on the property that had been used to bag topsoil.

Tract 56 (Dennis): RM Herland coordinated with the Dennis property on the status of the acquisition. Regional Realty Officer agreed in September 1995 to fund the appraisal after learning about the property from RM Herland. Susan Russo, an appraiser in the Regional Office, visited the site with RM Herland on March 5, 1996 and discussed minor changes in the lot lines requested by the owner's daughter, who is the adjacent neighbor.

Tract 68 (Sung): RM Herland spoke with Jeffrey Sung on February 10, 1995 about land acquisition and notified the Realty Office of the landowner's interest in selling their property to the refuge. This property has not been purchased to date.

Tract 75 (Decker/Friend): RM Herland spoke with one of the owners of this property, Catherine Friend, who very much wanted to sell the property. A conflict exists between Ms. Friend and her brother, Jack Decker, who operates a tree farm on the property. RM Herland evaluated property to determine whether the existing use of the property as a Christmas Tree Farm could be continued for a 10-year period after the closing. RM Herland informed Norbert Turek of the Trust for Public Land, who had been working with owners, that the barn which was used for the sale of Christmas trees would need to be removed after Christmas tree harvesting was complete, that the owner would be required to carry a \$1 million liability insurance policy, and that a special use permit could only be issued for a five-

year period, although it could be extended if necessary to complete harvesting of the trees. Apparently Mr. Decker had problems with these requirements and the project stalled.

Tract 81 (Gronki): RM Herland and Julie Enger from the Trust for Public Land visited this property on September 10, 1996. Part of the discussion about this property, which contained high quality grassland habitats, involved the subdivision of 6 acres for the next door neighbor, Joao Amaral.

Tract 85 (Kuperus): RM Herland visited this property on July 31, 1996 with Julie Enger from the Trust for Public Land and met with the owner, Miles Kuperus. Mr. Kuperus wanted to subdivide the property and exclude the abandoned railroad bed from the purchase.

Tract 88 (Willson): RM Herland worked with Realty to secure funds from the Migratory Bird Conservation Fund to acquire this property and corresponded with the landowner about the status of the acquisition.

Tract 91 (Bicsak): RM Herland walked this property with Trust for Public Land representative Norbert Turek and owner Paul Bicsak and began the process of getting this acquisition funded with MBCF monies. The Bicsaks accepted our offer December 1996.

Tract 94 (Chase): RM Herland spoke with Roseanne Chase on February 10, 1995 about land acquisition and notified the Realty Office of the landowner's interest in selling their property to the refuge. She walked the property on August 24, 1995 and confirmed the Service's interest in the land.

Tract 118 (Van Vliet): RM Herland contacted Mildred Van Vliet on February 13, 1995, confirmed her continued interest in selling her property to the refuge, and provided information to the Realty Office to add the property to the refuge through categorical exclusion.

Tract 120 (Wesloske): RM Herland visited with Josephine Wesloske and walked her property on October 1996 to determine whether it was of interest for acquisition. It contains tussock sedge wetlands, seeps, and organic soils and is of interest.

Appel: RM Herland walked this 73-acre forested property located north of Scenic Lakes Road in Vernon with the landowner on December 24, 1996. This property is not in the current acquisition boundary but could be added by categorical exclusion.

Egan: RM Herland met with the owners of this forested property located to the north of Scenic Lakes Road in Vernon and Hardyston, New Jersey. This property is not in the current acquisition boundary but could be added by categorical exclusion. The owners are interested in life rights and permanent protection of their land.

Land Acquisition Status through 1996

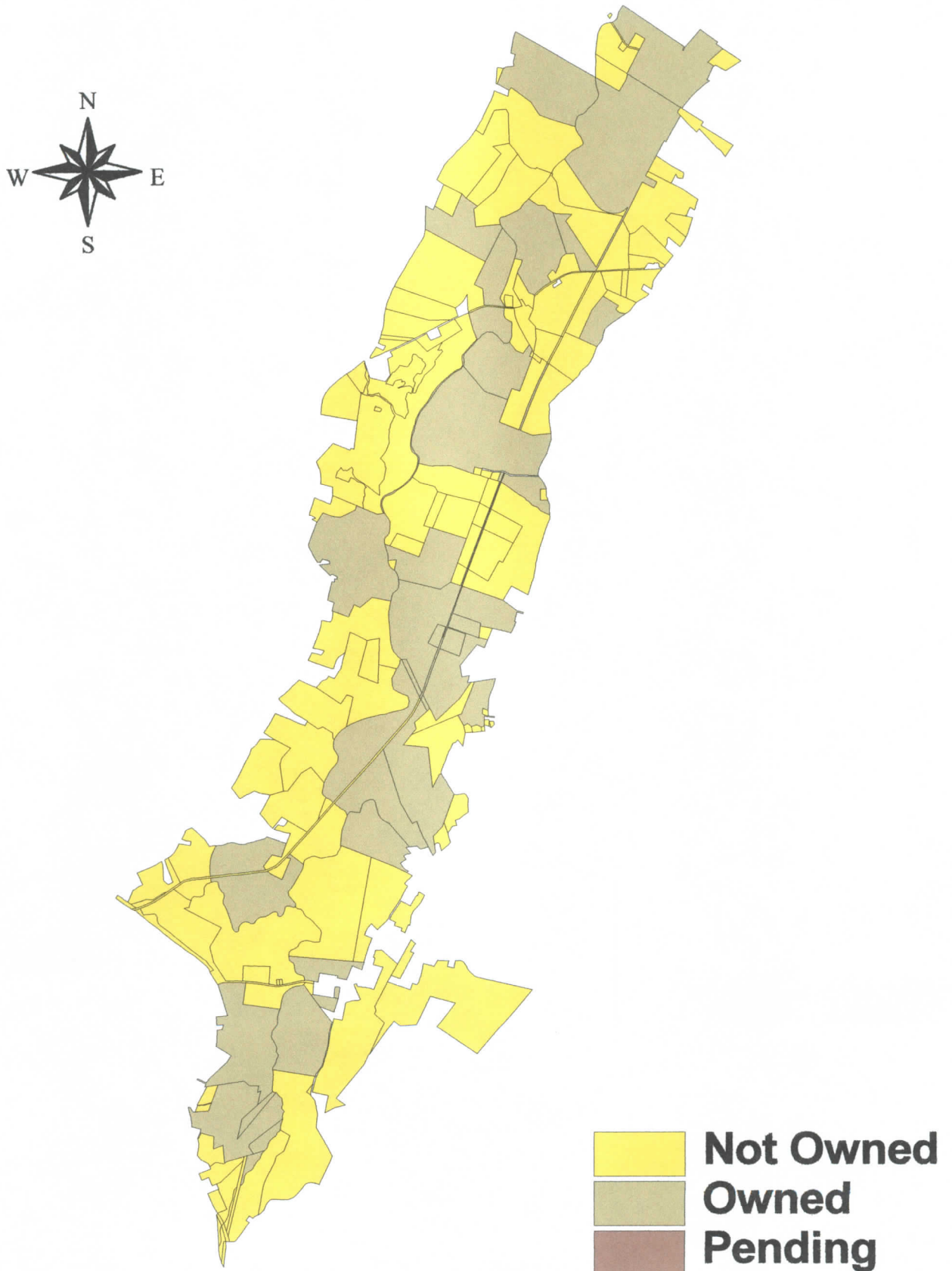


TABLE 4. PROPERTIES ACQUIRED AS OF DECEMBER 31, 1996					
DATE OF CLOSING	TRACT # (former #)	ACREAGE	TOWNSHIP AND STATE	BLOCK AND LOT	LANDOWNER
1-16-1992	79, -a	156.2	Wantage, NJ	Block 2 Lots 21.05, 25	Meadowview Farms/E. Nowicki
2-27-1992	69	30.7	Wantage, NJ	Block 2 Lot 1A	NJ Conservation Foundation
4-24-1992	51	104.7	Vernon, NJ	Block 10 Lot 7	West Valley Sports Club
7-01-1992	22	112.0	Hardyston, NJ	Block 2 Lots 6, 7	L. Mack
7-10-1992	15a (27)	29.3	Vernon, NJ	Block 170 Lot 12.05	TPL (W. Wesolowski)
8-13-1992	15b (63)	73.4	Wantage, NJ	Block 1.02 Lot 10.01	TPL (C. Quinn)
9-2-1992	22a	32.6	Vernon, NJ	Block 220 Lot 16	L. Mack
10-27-1992	46	290.4	Vernon, NJ	Block 70, Lot 8 Block 120 Lots 1, 2, 3, 4, 5	Meadow Park/ B. Montalbano
11-12-1992	32, -a	120.0	Vernon, NJ	Block 170 Lot 6	M. Warwick/ M. Imperatore
11-12-1992	64	51.3	Wantage, NJ	Block 1.02 Lot 19.01	A. Hovey
12-7-1992	15 (48)	86.1	Vernon, NJ	Block 70 Lots 4, 5, 6	TPL (R. Cline)
2-10-1993	15c, R (31)	135.85	Vernon, NJ	Block 170 Lots 1, 3.02	TPL (C. Friend)
11-10-1993	86, -a, -I,R	175.3	Wantage, NJ	Block 7 Lots 3, 7.01	L. Charney
12-13-1993	74, R, R-1	176.4	Wantage, NJ	Block 2 Lots 12.01, 13.01	D. Parrott
4-15-1994	52	349.5	Vernon, NJ	Block 10 Lots 1, 2, 3, 5, 12, 23, 26.01	Kenco Land/ Liberty Sod Farm

TABLE 4. PROPERTIES ACQUIRED AS OF DECEMBER 31, 1996					
4-15-1994	52a	147.1	Warwick, NY		Kenco Land/ Liberty Sod Farm
6-21-1994	57, -I, -II	147.84	Wantage, NJ	Block 1.02 Lot 3.01	D. Lott
10-13-1994	24	119.06	Vernon, NJ	Block 170 Lot 33	Franklin Associates
10-13-1994	113 (24)	130.69	Vernon, NJ	Block 174.02 Lot 32.03	Urban Atlantic Vernon
1-19-1995	114 (24)	110.59	Vernon, NJ	Block 174.03 Lot 32.02	Franklin Associates Vernon I
1-19-1995	115 (24)	69.98	Vernon, NJ	Block 174.01 Lot 32.01	JLS.LP (Franklin Associates)
11-15-1995	34	13.6	Vernon, NJ	Block 170 Lot 4	M. Brown
11-15-1995	30, -a	6.39	Vernon, NJ	Block 170 Lot 33.01	A. Fischer
12-8-1995	33, -a	24.97	Vernon, NJ	Block 170 Lots 2, 3.01, 5	M. Belcher
2-7-1996	36	82.79	Vernon, NJ	Block 170 Lot 19	T. Murray
9-27-1996	87	10.3	Wantage, NJ	Block 7 Lot 4	G. Hlavacek
9-27-1996	88	121.03	Wantage, NJ	Block 7 Lot 2	Willson Estate
12-20-1996	118	29.7	Vernon, NJ	Block 71 Lots 9, 9.01	M. Van Vliet
TOTAL ACREAGE: 2,937.8					

2. Easements (Nothing to Report)

3. Other

On February 16, 1995, RM Herland traveled to Forsythe NWR to meet with Realty Officer Tony Léger and Trust for Public Land representatives Allan Front, Phyllis Nudelman, and

Norbert Turek to outline land acquisition priorities for the refuge. This was RM Herland's first meeting with TPL, and was the start of a very productive relationship.

RM Herland met with Heinz and Bennie Costens, former owners of Tract 51, and agreed to extend their special use permit to continue occupancy of the former West Valley Sports Club until the end of April 1995.

On February 22, 1995, RM Herland was informed by John Askildsen, president of the Bedford Audubon Society, of a valuable grassland in Ulster County, New York owned by the West Point Military Academy that may be declared surplus. He believed the site had great importance to grassland birds but was in need of management. This conversation marked the first time anyone on the refuge staff had heard of the "Galeville Army Training Site". On May 5, 1995, RM Herland conducted the first site visit to the property. Over the next two years, refuge staff worked with Walt Quist of the Regional Realty Office to pursue the transfer of this property from the U.S. Army to the Service. On October 29, 1995, RM Herland sat on a panel at a forum sponsored by Congressman Maurice Hinchey about the disposition of the Galeville site. At this meeting, there was not much support for protecting this site for wildlife! Most of the audience wanted to use the site as a veteran's cemetery or ballfields. On February 12, 1996, the Regional Land Acquisition Review Committee decided to request transfer of the Galeville facility from the military. Concern was expressed about the buildings on site, potential contaminants, and management. For the rest of the year, RM Herland was involved in negotiations with the Town of Shawangunk, the National Park Service and Congressman Hinchey about multiple users and owners of the land. There was a concerted effort on the part of the Service to assist the town's efforts to meet their recreational needs for ballfields. By the end of 1996, a significant movement by local and national conservation organizations to protect this area as a refuge and prohibit the conversion of any of the land for other uses was underway.

In May 1995, a request for a special use permit to remove timber from privately owned Tract 53 revealed a disagreement over the boundary between Tracts 52 and 53 and the ownership of a 32.5-acre area known as 52-I. RM Herland thought this land was owned by the Service; the owners of Tract 53 thought it belonged to them. After checking with Realty, it was determined that the property was still in private ownership. Surveyors from the Regional Realty Office posted the correct boundary, and the refuge land acquisition status map was corrected.

RM Herland delivered revenue sharing checks to the town managers in Vernon, Wantage, and Hardyston Townships, New Jersey, and Warwick, New York in April and May 1995 for lands owned in 1994, and in July 1996 for lands owned in 1995. Warwick received its first revenue sharing check in 1995. Payment amounts are provided below:

TABLE 5. SHARED REVENUE PAYMENTS					
	Vernon, New Jersey	Wantage, New Jersey	Hardyston, New Jersey	Warwick, New York	All towns
Year					
1993	\$5,755	\$6,596	\$1,109		\$13,460
1994	\$11,907	\$6,699	\$1,058		\$19,664
1995	\$15,407	\$18,143	\$1,047	\$1,370	\$35,967
1996	\$27,939	\$15,461	\$892	\$1,168	\$45,460
Total	\$61,008	\$46,899	\$4,106	\$2,538	\$114,551

D. PLANNING

1. Master Plan (Nothing to Report)
2. Management Plan

ROS Robichaud updated the annual hunt program in October 1995.

RM Herland drafted a zebra mussel contingency plan in October 1995. Although no zebra mussels had been found in State waters by that date, there was considerable outreach being conducted to make boaters aware of the mussels and the threats they pose. Development of this plan was required by the Washington Office.

3. Public Participation

On July 13, 1995, the refuge hosted its first "community" meeting in the newly renamed Owens Station Education Center at the former West Valley Sports Club. Approximately 125 residents attended and asked questions about hunting, fishing, equestrian uses, flooding due to management activities, property rights and land acquisition.



Local residents listen to RM Herland at the first community meeting *N. Turek 7/95*

During 1995, public notices announcing the refuge's application for a New Jersey General Freshwater Wetlands Permit (NJGFWP) and Stream Encroachment Permit from the New Jersey Department of Environmental Protection (NJDEP) to complete planned wetland restoration work on the former Liberty Sod Farm were printed in several area newspapers. Additionally, letters with the public notice information were sent to all landowners within 200 feet of the project. This was done as part of the NJDEP application process which required that we advertise our intent to obtain this permit.

Many landowners have come to the refuge office and/or approached staff in the field with questions regarding the sod farm wetland restoration. Most believed that the refuge was going to flood surrounding landowners and drown crops planted on adjacent farmlands. Refuge staff spent many hours explaining the project and ensuring that the intent of the project - the restoration of wetland habitat and moist soil management - was understood.

On August 22, 1996, more than 50 people attended a public information session regarding the refuge's draft Outreach and Visitor Services Plan. The meeting was held at the Owens Station Education Center. Participating from the Regional Office was Acting Assistant Regional Director Tony Léger.

4. Compliance with Environmental and Cultural Resource Mandates

In August 1995, after several months of meetings and hard work, ROS Robichaud completed the NJGFWP and Stream Encroachment Permit applications for the sod farm project. These permits will allow the refuge to create new impoundments and install water control structures to allow modification of water levels within the impoundments. Initially, we had hoped that the New Jersey portion of the project would be included in the station-

wide general permit for water management activities. However, due to the large size of the former Liberty Sod Farm, the NJDEP would approve the general permit only with the deletion of the sod farm project. By the end of 1995, the Stream Encroachment Permit had been granted. The NJGFWP was granted in early 1996.

An Intra-Service Section 7 Biological Evaluation for the sod farm habitat enhancement project was completed and sent to the NJFO for approval.

Regional Archeologists John Wilson and Shelley Hight met with RM Herland, ROS Robichaud and local geologist Philip LaPorta on December 2, 1996 to discuss prehistoric quarrying use in the Wallkill Valley. Visited Native American quarry sites on Tract 56. On December 3, refuge staff and regional archeologists met with local historian Ron Dupont and investigated the dilapidated carriage barn on Tract 23. It was determined that it would not be a problem to demolish the barn. Also met with Tract 23 owner Bill Van Althuis and determined that the area between the house and the barn had been bulldozed and the hillside removed by the previous owner. Any artifacts that might have existed would have been long destroyed.

RM Herland drafted an Environmental Assessment of the proposed Visitor Services Program on the refuge.

5. Research and Investigations

Wallkill River NW95 - "The Selection of Nesting and Foraging Habitats by Grassland Birds on the Wallkill River National Wildlife Refuge" (14-45-0009-1575 #37)

Initiated in 1995 by refuge cooperative education student Lamar Gore, the objectives of this study were to identify and map key grassland sites for nesting and foraging birds and to determine habitat characteristics useful in the restoration of grassland sites on the refuge. In 1995, Biological Student Trainee Gore located, mapped, and observed thirteen study sites. Each circular study plot measured 160 meters in diameter and was subdivided by three survey strips. The project was continued in 1996, working under the guidance of Dr. Becky Field of the Massachusetts Cooperative Fish and Wildlife Research Unit located at the University of Massachusetts.



Student Trainee Lamar Gore conducting bird surveys on the refuge. *L. Herland 7/95*

Wallkill River NW95 - "Evaluation of Contaminants in Water, Sediments, and Fish of the Wallkill River National Wildlife Refuge"

The background contaminants study was conducted to characterize contaminant concentrations in the refuge and to assess the significance of their presence to refuge management. This effort entailed the collection of sediments, water and fish for chemical analyses and the performance of multiple toxicity tests on bulk sediment, sediment pore water, and surface water. Specifically addressed were the extent of trace metals, chlorinated pesticides, polychlorinated biphenyls, polynuclear aromatic hydrocarbons and volatile organic compounds. Samples were collected by NJFO contaminants specialist Dr. Katie Zeeman from 8 locations on both the Wallkill River and Papakating Creek. Samples were shipped to the Patuxent Analytical Control Facility for processing. Toxicity tests were completed by mid-July 1995. Results of the chemical analyses were received at the NJFO in March 1996 but were not reported to the refuge by the end of 1996.

A pre-proposal for environmental contaminants research was submitted to the NJFO on April 5, 1996. The proposal, which eventually became a research project at Patuxent Research Refuge, called for an investigation of the impacts of mosquito larvicides on the beetles and weevils that are used for the biological control of purple loosestrife. Questions

of concern regarding the effect, if any, of larvicides on leaf-eating beetles and root-boring weevils included: 1) does mortality occur and if so, at what application rate; 2) does spraying beetles at certain stages in their lifecycles have different effects and if so, what effects; 3) do beetles survive but is reproduction impaired? This information would be used to modify purple loosestrife control and mosquito control programs.

A grant application for \$5,000 to conduct bog turtle surveys on the refuge was submitted on June 28, 1996 to the Regional Office Ecological Service's endangered species staff. The project, to be conducted by New Jersey Division of Fish, Game, and Wildlife, would map all potential bog turtle sites on the refuge, and rank these sites according to suitability.

E. ADMINISTRATION

1. Personnel

TABLE 6. REFUGE STAFFING				
EMPLOYEE	POSITION	GRADE	EOD	STATUS
Elizabeth A. Herland	Refuge Manager	GS-12	1/22/1995	PFT
Renee L. Robichaud	Refuge Operations Specialist	GS-9	6/19/1994	PFT
Julie A. Reid	Office Assistant	GS-5	12/27/1992	PFT
Lamar Gore	Biological Student Trainee	GS-5	5/28/1995	PFT
Terry Mitchell	Maintenance Worker	WG-7	4/28/1996	PFT

Libby Herland came to the refuge on January 30, 1995 from the Regional Office in Hadley, Massachusetts, where she had been the Private Lands Coordinator.

Lamar Gore was a graduate student at the University of Massachusetts in Amherst. Part of his work at the refuge was the investigation of habitat selection in grassland birds. He began his work on the refuge under the auspices of the cooperative education program on June 1, 1995.

Julie Reid transferred to the National Institute of Health in Washington, D.C. in July 1995. Her organization, helpfulness, and sense of humor were greatly missed after her departure.

Terry Mitchell transferred to the refuge from the John Heinz NWR at Tinicum in Philadelphia, Pennsylvania, where he also held a maintenance position. Terry became the first maintenance worker on the refuge.



Staff pictured from left to right ROS Robichaud, MW Mitchell, RM Herland.
C. Husgen 11/96

TABLE 7. FIVE YEAR COMPARISON OF REFUGE STAFFING			
CALENDAR YEAR	PERMANENT FULL-TIME	TEMPORARY	TOTAL FTE USED
1996	4	0	2.90
1995	4	0	2.92
1994	3	0	2.53
1993	2	0	2.00
1992	2	0	1.02

Refuge staff and volunteers participated in many training workshops and classes in 1995 and 1996:

TABLE 8 . TRAINING UNDERTAKEN BY REFUGE STAFF IN 1995 AND 1996

Staff Person	Class	Date
RM Herland	Refuge Academy	2/27-3/17/95
RM Herland	I.M.P.A.C. Visa	2/15/95
RM Herland	Biological Database Workshop	5/17-18/95
RM Herland	Fire: S-130, S-190, I-200	6/12-16/95
RM Herland	Environmental Compliance	7/10-12/95
RM Herland	Fire Management	7/25-27/95
RM Herland	Law Enforcement for Supervisors	8/8-10/95
RM Herland	Safety Workshop	9/20/95
RM Herland	Integrated Wetland Management	10/17-18/95
RM Herland	Small Purchases/Simplified Acquisition	11/27-12/1/95
RM Herland	Fire Behavior: S-290, S-390	1/21-25/96
RM Herland	Prescribed Fire Planning & Implementation	3/11-15/96
RM Herland	Zebra Mussel Workshop	3/22/96
RM Herland	Prescribed Burn Boss Evaluation	4/28-5/4/96
RM Herland	Regional Outreach Workshop	9/18-20/96
ROS Robichaud	New Employee Orientation	1/24 - 27/1995
ROS Robichaud	Windows 3.1	Spring 1995
ROS Robichaud	Environmental Compliance Training	3/14-15/95
ROS Robichaud	Fire: S-130, S-190, I-200	4/24-28/95
ROS Robichaud	Heavy Equipment	5/8-11/95
ROS Robichaud	Biological Database Workshop	5/17-18/95
ROS Robichaud	Introduction to Supervision	5/22-28/95
ROS Robichaud	Basic Aircraft Safety	6/14/95
ROS Robichaud	Outdoor Recreation Planner Workshop	8/7-11/95
ROS Robichaud	Safety Workshop	9/20/95
ROS Robichaud	Collateral Duty Safety	9/25-29/95
ROS Robichaud	Fire Behavior: S-290, S-390	1/21-25/96

ROS Robichaud	Refuge Management Training Academy	2/25-3/15/96
ROS Robichaud	Prescribed Fire Planning & Implementation	4/8-12/96
ROS Robichaud	Prescribed Burn Boss Evaluation	4/28-5/4/96
ROS Robichaud	Signs and Wayside Exhibits	5/20-24/96
ROS Robichaud	Building Community Support	8/11-16/96
ROS Robichaud	Wetland Plant Identification	8/25-30/96
OA Reid	Windows 3.1	Spring 1995
OA Reid	FFS/FPPS	3/7-8/95
MW Mitchell	Basic Officer Training	11/18/96 - 2/97

2. Youth Programs (Nothing to Report)

3. Other Manpower Programs

During July 1995, four juvenile offenders donated a total of 40 hours of community service on refuge projects. The juveniles were referred to the refuge by the Vernon Juvenile Conference Committee.

Project Self-Sufficiency placed Laura Schmitter at the refuge in a 9-month secretarial training program, working 16 hours per week. She was of great assistance in 1996.

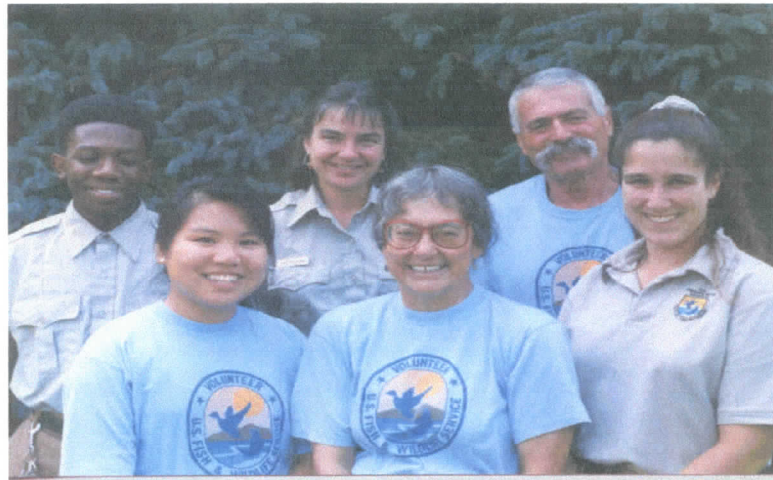
4. Volunteer Program

TABLE 9. VOLUNTEER HOURS		
Activity	1995	1996
Maintenance	904	549
Resource Support	652	375
Public Use	729	92
Administrative Support	401	57
Totals:	2,686	1,073

On February 16, 1995, the refuge held its first annual Volunteer Recognition Party. Nineteen volunteers were invited to attend. National Wildlife Refuge calendars were given

to all volunteers. Special awards were given to the following volunteers: certificates (for at least 10 hours of service) to Scott Angus, Richard Calamusso, Monica Juhasz, and Bill Stoehr; volunteer pins (for at least 100 hours of service) to Richard Calamusso, Monica Juhasz and Bill Stoehr; Seasons of the Wild books (for the most hours of service in a given year) to Monica Juhasz for over 144 hours in 1994 and to Bill Stoehr, who had the greatest number of volunteer hours in 1991, 1992, and 1993.

During the summer of 1995, two Student Conservation Association Resource Assistants worked at the refuge. George and Aurora Roberts contributed significantly by working on projects such as public use trail planning, education, goose banding with the New Jersey Division of Fish, Game and Wildlife, grounds and facility maintenance, and coordination of a visit from Russian natural resource managers and military personnel. On May 17, 1995, Chrystal Roberts of Pennsylvania State University began a summer internship. Two other student volunteers, Greg Gelewski and Emily Chen, began the week of June 5, 1995.

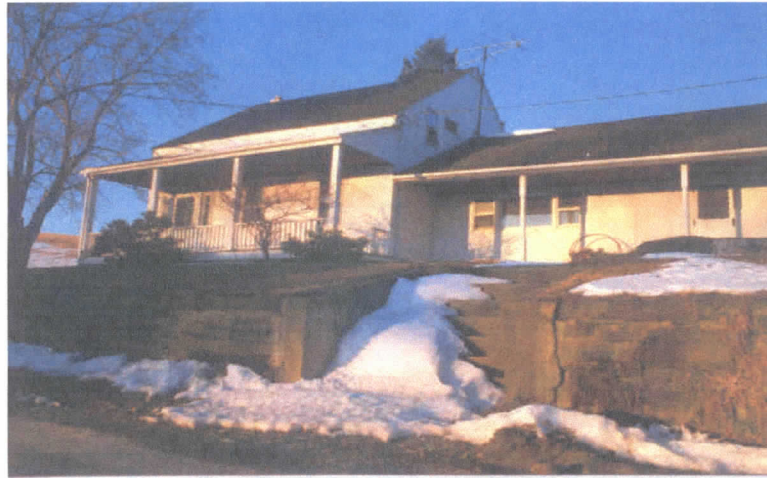


From left to right, student trainee Lamar Gore, volunteer Emily Chen, RM Libby Herland, SCA Aurora Roberts, SCA George Roberts, ROS Renee Robihaud. *J.Buck 8/95*

During August 1995, adjacent landowner Len Dujets assisted the refuge in developing a hunt parking lot off of Kelly Road. Mr. Dujets mowed the parking area, posted signs, and picked up garbage.

Also during 1995, Volunteers Emily Chen and Greg Gelewski and Intern Crystal Roberts assisted with and coordinated such activities as the refuge community meeting, the refuge booth at the Sussex County Farm and Horse Show, the development of a tract list with landowner information, wetland restoration potential evaluation, maintenance, groundskeeping, goose banding, and more.

During 1995, Volunteer Richard Calamusso donated approximately 500 hours towards the sod farm project and renovation of quarters #2, located at Tract 57.



The Lott farmhouse - Quarters #2 *J. Reid 2/95*

Volunteer Bill Stoeher, as usual, assured that the refuge's boundary posts were correctly placed. Volunteer Stoeher is a professional surveyor who always makes the time to assist refuge staff and other volunteers with finding boundary corners, lines, and installing boundary posts.

On October 14, 1996, eight local Boy Scouts worked with MW Mitchell to clear litter from the future Wood Duck Nature Trail.

5. Funding

TABLE 10. FIVE YEAR COMPARISON OF REFUGE FUNDING (in thousands of dollars)					
FUNDING CATEGORY	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996
Minimum level (1261)	19.5	99.3	107.3	162.9	176.7
Other operations (1261)	0	7.5	6.0	4.9	44.5
Base Maintenance (1262)	0	12.0	21.0	21.0	21.0
Other Maintenance (1262)	0	7.0	5.5	20.0	0
Other/Special Funding	56.0	0	0.8	47.3	0.75
TOTAL	75.5	125.8	140.6	256.1	243.0

Minimum level is defined as salaries, utilities, service contracts, motor fuel, training, travel, awards, and supplies. Base maintenance is defined as funds used to repair or replace items of a routine or on-going nature, such as automobile maintenance.

6. Safety

Refuge staff worked to make safety a priority in 1995 and 1996. Many staff safety meetings were held in addition to various safety training class that were attended (see table). No incidents occurred which required a loss of work time. In addition, ROS Robichaud completed a Bloodborne Pathogen Exposure Program, revised the Station Safety Plan, and updated all station first aid kits.

On December 15, 1995, Refuge Officer Tom Provost from Patuxent Research Refuge dented the side of the Dodge pickup when turning the vehicle around on the abandoned railroad bed off Kelly Road. An incident report was filed.

Also during December 1995, RM Herland attempted to drive the Dodge pickup to Pike County Truck and Auto, the vendor which has been servicing refuge vehicles for the past year, with ROS Robichaud following in the Suburban. On the way, the left front wheel began to ride at an unusual angles, and as RM Herland tried to pull off the road, the wheel fell off. The truck was towed the rest of the way to the vendor. The mechanics were uncertain whether the incident was a result of "natural causes" or vandalism (possible retribution for citations issued during the fall deer season).

RM Herland brought a representative from Detail Associates to every building on the refuge to determine the presence of asbestos on the refuge, particularly in buildings slated for removal or demolition.

TABLE 11. SAFETY MEETINGS & TRAINING		
Date	Attendees	Video/Topic
1/9/1995	OA Reid, ROS Robichaud Volunteer Bill Stoehr	"Fire Sleuths"
2/28/1995	OA Reid, ROS Robichaud	"Leaflets Three - Let It Be"
4/10/1995	RM Herland, OA Reid, ROS Robichaud	"As It Should Be Done - Workplace Precautions Against Bloodborne Pathogens" and "Preventing Disease Transmission"
4/10/1995	ROS Robichaud	Bloodborne Pathogen Training with certification
4/19-20/1995	RM Herland, OA Reid, ROS Robichaud	American Heart Association Adult, Child, and Infant CPR

6/8/1995	RM Herland, OA Reid, ROS Robichaud, Trainee Gore, SCA Aurora Roberts, SCA George Roberts, Intern Crystal Roberts, Volunteer Greg Gelewski	"Lyme Disease - Facts, not Rumors" and "Step by Step - Job Safety Analysis"
6/13/1995	ROS Robichaud, Trainee Gore, SCA Aurora Roberts, SCA George Roberts, Intern Emily Chen, Intern Roberts, Volunteer Gelewski	Three-hour Defensive Driving Course (video- taught)
9/20/1995	RM Herland, ROS Robichaud	Workshop at Great Swamp NWR: Ed Bajakian and Ed Kaiser, Safety Office
9/25-29/1995	ROS Robichaud	Collateral Duty Safety Training
10/4/1995	RM Herland, ROS Robichaud	"Working Around Construction Equipment Safely"
11/6/1995	RM Herland, ROS Robichaud	ATV Safety Course: Great Swamp NWR
11/15/1995	RM Herland, ROS Robichaud	"Winter Driving"
12/5/1995	RM Herland, ROS Robichaud	"Holiday Hazards in the Home: and "Modern Technology and Driving"
2/5/1996	RM Herland, ROS Robichaud	"Asbestos: Understanding the Hazards"
4/10/1996	RM Herland, ROS Robichaud	"As It Should Be Done - Workplace Precautions Against Bloodborne Pathogens"
7/9/1996	RM Herland, ROS Robichaud, MW Mitchell, Trainee Gore, Intern Christian Seal, Volunteer Paul Champlin	"Meet Your Feet"

7. Technical Assistance

During February 1995, RM Herland provided comments to the New Jersey Field Office (NJFO) for use in preparing the Service's position on a New Jersey Freshwater Wetland Permit for humus/clay mining operation in drained wetlands owned by the Mt. Bethel Humus Company. Issuance of this permit will allow the applicant to expand their mining operations into an area which is located within the acquisition boundary of the refuge. The activity is water-dependent and it is likely the permit will be issued. However, refuge and NJFO staff have serious concerns about the effect the proposed project could have on water quality, adjacent wetlands, and site restoration. The official Service recommendation to the U.S. Environmental Protection Agency (EPA) will request additional information from the applicant. It is possible that the Service may become part of a team that must approve restoration plans before the permit is issued. If so, this position will represent a change from the previous Service policy that flatly refused issuance. While RM Herland would prefer that the proposed mining activity not occur on this property, she feels it is in the refuge's

best interests to work with EPA and the State of New Jersey to ensure that the impacts of this activity on the refuge are minimized if the permit is granted.

On May 12, 1995, Pete Benjamin of the New Jersey Field Office, Terry Caruso and Gene McColligan of the New Jersey Department of Environmental Protection, and Wade and Sharon Wander of Wander Ecological Consultants met with RM Herland regarding Mt. Bethel Humus Company's Freshwater Wetland Permit application. Various options for mitigation were discussed, and RM Herland led a tour of the sod farm to showcase moist soil management.

On August 25, 1995, RM Herland met with Bob Lyons of the Mt. Bethel Humus Company to tour their current operation and discuss the planned soil removal expansion. In September 1996, Mr. Lyons sent RM Herland a letter in which he proposed the acquisition of neighboring lands between Owens Station Road and Lake Wallkill Road, which would be used for mitigation and then donated to the Service for inclusion into the refuge. Mr. Lyons was informed that mitigation plans would need to be developed before this concept could be further considered.

8. Other

RM Herland was notified in February 1995 that Tennessee Gas Pipeline Company planned to conduct pipeline rehabilitation work on the refuge. This work was conducted during the summer of 1995 with minimal disturbance to refuge resources.



Transporting the discharge pipe across the Wallkill River during gas pipeline rehabilitation project. *L. Herland 7/95*

On June 20, 1995, RM Herland and Angie Graziano of the New Jersey Field Office met with Dave Zuidema and Brad Mason, aides to Congresswoman Marge Roukema (R-5). We discussed land acquisition, endangered species, public use, model airplanes, and illegal all terrain vehicle use of the refuge. Congresswoman Roukema's aides expressed their support for the refuge.

On June 26, 1995, RM Herland walked the Appalachian Trail through the refuge with members of the New Jersey Appalachian Trail Management Committee. This meeting set the stage for the management of AT lands next to the refuge, and for the maintenance of the trail in and near the refuge.

From July 10-12, 1995, Intern Crystal Roberts and Volunteer Emily Chen met with Peter Gibbs, St. Lawrence Wetlands Office, to gain exposure to wetland restoration processes. The group visited several restoration sites in various stages of completion. Intern Roberts and Volunteer Chen used this information to identify possible restoration sites on the refuge.

On July 20, 1995, Biological Student Trainee Gore, Intern Crystal Roberts, and Volunteers Emily Chen and Greg Gelewski visited the University of Massachusetts for a presentation by Secretary Babbitt. Each participant was able to personally meet the Secretary.

On October 21, 1995, RM Herland attended the annual meeting of the New Jersey chapter of The Nature Conservancy.

On November 7, 1995, RM Herland traveled to the Regional Office to participate in the Performance Review Board meeting.

On May 15, 1996, RM Herland participated in a prescribed fire in the Albany Pine Bush. The burn was organized by staff from The Nature Conservancy and the Albany Pine Bush Commission.

On October 28, 1996, RM Herland, staff and managers from the four other refuges in New Jersey, and New Jersey Division of Fish, Game and Wildlife Bob McDowell and his staff met at the Assunpink Wildlife Management Area to discuss opportunities to improve communication and coordination between the Service and the State.

TABLE 12. SPECIAL USE PERMITS ISSUED DURING 1995/1996			
Dates	Permittee	Use	Site
1/1/95 -12/31/95	Jim Cowling	grazing	Tract 79a
1/1/95-12/31/95 1/1/96-12/31/96	Richard Havens	grazing	Tract 15b
5/4/95-10/15/95 4/1/96-10/15/96	Sussex County Dept. of Health & Safety	mosquito control	south of Bassetts Bridge Road
6/1/95-7/30/95	Tennessee Gas Pipeline Company	pipeline rehabilitation	Tract 115
12/22/95-3/20/96	Paul Wesloske	transport of logged timber from landlocked private property across refuge	Tract 52
10/5/96-10/6/96	Sierra Club	public access	abandoned railroad bed off Kelly Road
11/5/95-11/4/96 10/21/96-10/20/97	Renee Robichaud	grazing	Tract 57
4/1/96-12/31/96	Foothill Acres Farm	farming	Tract 74
4/15/96-4/14/97	Gene Stires	photography	entire refuge

F. HABITAT MANAGEMENT

1. General (Nothing to Report)
2. Wetlands

The wetlands of the Wallkill River NWR can be divided into two major ecological systems: (a) riverine and (b) palustrine. The riverine system is limited to the main freshwater river channel and tributary systems. The palustrine wetlands are represented by three major types: (a) emergent wetland, (b) scrub-shrub, and (c) forested wetlands.

Palustrine emergent wetlands (marshes) occur along the margin of the Wallkill River. Common marsh plants characterizing this wetland type include reedgrass, spike rushes, sedges, and cattails.

On July 19, 1995, RM Herland and Volunteer Emily Chen visited the Sussex-Warren Natural Resources Conservation District Office in Hackettstown, New Jersey. Volunteer Chen visited the office again on July 24-27 and 31 to create overlays of aerial photographs

depicting drainage ditches within the refuge's acquisition boundary. This information assisted future wetland restoration and acquisition decisions.

During the 1995 field season, the sod farm project pushed forward. ROS Robichaud wrote a successful grant proposal for \$25,000 of Ducks Unlimited MARSH funds which was matched with a \$25,000 grant from the National Fish and Wildlife Foundation. The NFWF grant was extended to December 31, 1996 to allow completion of the project and then further extended to December 31, 1997. Minor dike damage that had occurred in the New York portion of the project was repaired, a dike that was causing flooding to a refuge neighbor was moved, and rip-rap was installed by Thomas Siekaniec from Moosehorn NWR, Bob Battin from Erie NWR, Jeff Graves from Iroquois NWR and private contractor Rich Calamusso of Saddle River Construction. A visit to the sod farm by moist soil management advisor Leigh Frederickson and other Service staff indicated excellent response to date by desirable vegetation (over 1,500 grams per square meter of very high protein). The food-producing annuals included pigweed, foxtail, panic grass, crabgrass, big-seeded smartweed, nodding smartweed, beggarticks, chufa, and red-rooted nutsedge. However, the group also expressed concern about the stability of the dikes and the presence of pest plants - Canada thistle, reed canary grass, cattail, and purple loosestrife.

In February 1996, ROS Robichaud prepared paperwork for the transfer of a NJ DEPE water diversion permit from the former owners of the Liberty Sod Farm to the refuge. This permit, which was approved, allowed the refuge to remove water from the Wallkill River for use in moist soil management activities on the former sod farm.

During 1996, contrary to the refuge work plan, no work was done on the New Jersey portion of the sod farm. The area became revegetated with many species of moist soil and grassland plants from the existing seed bank. Refuge staff and volunteers found many species of grassland birds nesting in the revegetated areas. Many of these birds are listed as endangered or threatened in New Jersey. The presence of these grassland birds caused some refuge staff and volunteers to question whether the moist soil project should continue.

On September 26, 1996, a meeting was held to discuss habitat management on the sod farm. Attendees were: RM Herland, ROS Robichaud, Biological Student Trainee Gore, Tom Goettal (Regional Office North American Waterfowl Management Plan), Curt Orvis (Regional Office Engineering), and Tom Jasikoff (Montezuma NWR); Rich Kane, New Jersey Audubon Society; Dennis Miranda, New Jersey Conservation Foundation; Bob Jordan, Ducks Unlimited; and Jim Sciascia and Joe Penkala, New Jersey Division of Fish, Game and Wildlife. Consensus was reached that refuge staff could probably successfully manage for both migrating waterfowl and shorebirds and breeding grassland birds at this site, through careful rotation of flooding and drawdown regimes in the impoundments and seeding. At this time, we began to refer to the sod farm project as a habitat enhancement project rather than a wetland restoration project.

During the fall and winter of 1996, ROS Robichaud began writing a second Environmental Assessment for the sod farm habitat enhancement project. The first did not include grassland habitat management in any of the alternatives.

3. Forests

Red maple swamps characterize the forested wetlands on the refuge. Upland forests are oak-beech hardwood forests. Several small hemlock patches are found throughout the refuge.

4. Croplands

Refuge neighbor Ed Van Althuis was granted permission to plant corn on a 14-acre parcel of Tract 24, which had been purchased in 1995. Mr. Van Althuis had traditionally planted this field in corn. He entered into a cooperative farming agreement to leave 10% (1 acre) of his crop standing for forage.

Ray Hamming was issued a Special Use Permit in May 1996 to harvest 12 acres of alfalfa and plant corn on 6 acres of Tract 74. He had historically used these lands before they were purchased by the Service. In September 1996, he was told that haying would be allowed in 1997 only after August 1st, as grassland birds had been observed in the alfalfa fields during the summer.

5. Grasslands

The grasslands at the refuge have a long history of being grazed or mowed. This is now coming to a gradual end and the grasslands now exist of various successional stages. Approximately 30% of the grasslands consist of short grasses (<50 cm) and another 40% are tall grasses (>50 cm). At this time, the refuge is trying to keep these lands as grasslands until a habitat management plan is written. In the future, some fields will be allowed to revert to mature forest and others will be managed as early successional lands.

On April 21, 1995, RM Herland met with Phyllis Anderson, Sussex County Soil Conservation District, and Dick Hunsinger and Bill Patterson of Franklin Associates, regarding the erosion problems at the Tract 24 former soil removal operation. Franklin Associates was the past owner of Tract 24. Phyllis Anderson and RM Herland were in agreement that the site reclamation was not acceptable, although they did not agree on the amount of remedial action needed to address the current erosion problems.

On May 8, 1995, RM Herland met with Dan Jones, Natural Resources Conservation Service in Hackettstown, New Jersey, to inspect the former soil removal site on Tract 24. Dan agreed with RM Herland that the reclamation completed was unacceptable. Dan agreed to contact the Sussex County Soil Conservation District on this matter.

From August 14-25, 1995, Bob Battin of Erie NWR operated a rented bulldozer to smooth some of the contours on Tract 24. The purpose was to make the area less attractive to ATV riders, thereby reducing further erosion and wildlife disturbance from ATVs. His work was effective and there was a noticeable reduction in illegal use. The site was seeded with native grasses by local farmers Frank and Ed Van Althuis.



Bob Battin begins re-contouring former sand and gravel pit on tract 24. *FWS photo*

On August 1, 1996, RM Herland attended a meeting called by Vernon Township to address the serious erosion problem on Tract 24. The town attorney required the problem be rectified before the performance bond held by Blue Circle Materials (Franklin Associates) could be released. Blue Circle reluctantly agreed to do the erosion work required of them by the end of September 1996.

6. Other Habitats

Nationally recognized woodcock biologist Greg Sepik from Moosehorn NWR visited the refuge on April 18, 1996. He visited several areas on the refuge and indicated that areas on Tracts 23, 46, and 74 have best potential for woodcock management.

7. Grazing

Grazing was allowed on several tracts on the refuge with the primary objective of maintaining early successional stages and control of weed species such as multiflora rose and Canada thistle.

TABLE 13. GRAZING SPECIAL USE PERMITS ISSUED DURING 1995/1996				
Year	Permittee	Type/Number	Acreage grazed	Tract
1995	Jim Cowling	20 sheep	22	79a
1995/1996	Richard Havens	30 cattle	17	15b
1995/1996	Renee Robichaud	3 horses	20	57

8. Haying

Tract 79 was mowed in early July 1995 without permission by a refuge neighbor. This created a problem for the research being conducted by Biological Student Trainee Gore but also initiated a program for working cooperatively with local farmers to hay the refuge after August 1st, when grassland birds have fledged.

9. Fire Management

On September 10, 1995, the refuge experienced its first documented wildfire. The half-acre ground fire on Tract 32 was apparently started from an illegal campfire site. The New Jersey Forest Fire Service and the Pochuk Volunteer Fire Department responded to the fire, along with RM Herland and Volunteer John Buck. The fire was successfully extinguished after 1,100 feet of hose was brought to the site by the Pochuk Fire Department.

On March 26, 1996, RM Herland and ROS Robichaud met with Ed Schoonmaker and Mike Hennessey, Division Fire Warden and Assistant Division Fire Warden of the New Jersey Forest Fire Service (NJFFS) to discuss cooperative efforts to fight wildfires and implement prescribed burns on and near the refuge. The NJFFS agreed to supply both trained firefighting crews and equipment to assist the refuge's prescribed burn efforts. This assistance was essential since the Wallkill River NWR had no firefighting equipment other than hand tools. RM Herland agreed to draft a Memorandum of Agreement for signature by both parties.

RM Herland participated in a prescribed fire burn in the Albany Pine Bush on May 15, 1996. The burn was organized by The Nature Conservancy and the Albany Pine Bush Commission. The objective of the burn was to top-kill invasive plants in the pitch pine forest and encourage the growth of lupine for the benefit of the Karner blue butterfly population. Participation in this burn fulfilled an ecosystem team objective.

On December 5, 1996, Regional Fire Management Coordinator Allen Carter and Fire Management Officers Dave Brownlie and Rick Vollick toured the refuge with RM Herland

and ROS Robichaud to determine the potential for prescribed burning on the refuge. RFMC Carter indicated that about 1,000 acres could be burned on the refuge on a regular basis. They also indicated that wildfire suppression would generally not be a problem on the refuge due to our cover types and abundant wetlands.

10. Pest Control

On February 17, 1995, RM Herland and ROS Robichaud met with Scott Crans, Executive Director of the Sussex County Mosquito Control Commission; Wayne Crans, Rutgers University; and Bob Kent, New Jersey Department of Environmental Protection and Energy Mosquito Control Liaison, to discuss mosquito biology, the status of land acquisition at the refuge, the compatibility process, and moist soil management techniques. We talked about the mosquito control commission's 1995 Special Use Permit and toured the Sod Farm Project. While they had no concerns about the sod farm project, they did have concerns about restrictions on larvicidal and adulticidal applications. They agreed to give us their new "best management practices guidelines and we agreed to revisit the issue of only allowing spraying during declared public health emergencies.

On April 14, 1995, eight pesticide use proposals (PUPs) prepared by RM Herland for the use of larvicides to control mosquito populations were mailed to Regional Contaminants Coordinator Tim Fannin. Approval for the use of adulticide was not requested. All PUPs were approved. The approved larvicides were various formulations of Bti (*Bacillus thurgiensis*), temephos, and methoprene. The Pesticide Use Report for Calendar Year 1995 was prepared and mailed to Tim Fannin, Regional Environmental Contaminants Coordinator, on January 20, 1996. 450 acres of refuge lands were treated with Bti for mosquito control; 11 acres of cropland was treated with metolachlor and pendimethlin.

On July 20, 1995, RM Herland and ROS Robichaud attended a workshop on purple loosestrife biological control at Cornell University. Over 500 *Galerucella sp.* leaf eating beetles used for demonstration purposes at the meeting were given to the refuge for release. ROS Robichaud and Intern Crystal Roberts released the insects on July 25 in the southernmost unit of the sod farm.

On March 7, 1996, pesticide use proposals for mosquito control were submitted to the Regional Office. The area in which larvicides could be used was restricted to south of Owens Station Road because of concerns that the larvicide could negatively effect the *Galerucella* beetles that were released on the sod farm in 1995.

On June 25, 1996, ROS Robichaud and Intern Christian Seal released approximately 2,500 *Galerucella sp.* on the refuge. Approximately 900 were released at both the sod farm (Tract 52) and at Kelly Lane (Tract 46). An additional 600 were released at the Lott Farm (Tract 57). Approximately 1,000 beetles were packaged with small pieces of purple loosestrife stalks in ziploc bags in refuge refrigerators for overwintering and release in 1997.

11. Water Rights (Nothing to Report)
12. Wilderness and Special Areas (Nothing to Report)
13. WPA Easement Monitoring (Nothing to Report)

G. WILDLIFE

1. Wildlife Diversity

The refuge was established as a biodiversity refuge. It has a variety of habitat types ranging from calcareous fens to hemlock ridges. A diverse wildlife population exists on the refuge. We are, however, just beginning to document the species using the refuge for some or all of their life cycle.

2. Endangered and/or Threatened Species

a. Federally Threatened and Endangered Species

In the State of New Jersey, 29 federally listed threatened and endangered species have been noted. None have been found to utilize the refuge. The opportunity does exist, however, for observation of a bald eagle or peregrine falcon during migration. The bog turtle, a candidate for listing as threatened, has been confirmed within the refuge boundary.

b. State of New Jersey Threatened and Endangered Species

Nineteen State-listed threatened and endangered species are known to utilize the Wallkill River bottomlands. Thirteen of these species have been found and confirmed within the refuge boundary. These species include the short-eared owl, barred owl, red-shouldered hawk, Cooper's hawk, northern harrier, savannah sparrow, sedge wren, bobolink, great blue heron, red-headed woodpecker, upland sandpiper, wood turtle, and bog turtle.

The barred owl, a State threatened species, is known to nest within the refuge boundary. The refuge also offers excellent potential to support breeding and migrating osprey, a threatened species in New Jersey.

**TABLE 14. NEW JERSEY THREATENED AND ENDANGERED SPECIES
UTILIZING THE WALLKILL RIVER NWR**

Species	Threatened	Endangered
Barred Owl (<i>Strix varia</i>)	x	
Short-eared Owl (<i>Asio flammeus</i>)		x
Red-shouldered Hawk (<i>Buteo lineatus</i>)	x	
Cooper's Hawk (<i>Accipiter cooperii</i>)		x
Northern Harrier (<i>Circus cyaneus</i>)		x
Bald Eagle (<i>Haliaeetus leucocephalus</i>)		x
Osprey (<i>Pandion haleatus</i>)	x	
Savannah Sparrow (<i>Passerculus sandwichensis</i>)	x	
Grasshopper Sparrow (<i>Ammodramus savannarum</i>)	x	
Vesper Sparrow (<i>Pooecetes gramineus</i>)		x
Bobolink (<i>Dolichonyx orzivorus</i>)	x	
Sedge Wren (<i>Cistothorus platensis</i>)		x
Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	x	
Great Blue Heron (<i>Ardea herodias</i>)	x	
Pied-billed Grebe (<i>Podilymus podiceps</i>)		x
American Bittern (<i>Botaurus lentiginosus</i>)	x	
Upland Sandpiper (<i>Bartramia longicauda</i>)		x
Wood Turtle (<i>Clemmys insculpta</i>)	x	
Bog Turtle (<i>Clemmys muhlenbergii</i>)		x

Source: Endangered and Non-game Species Program, New Jersey Division of Fish, Game and Wildlife

3. Waterfowl

During migration, the Wallkill River bottomlands attract large numbers of waterfowl, including the following:

American black duck*	ruddy duck	green-winged teal
mallard*	blue-winged teal	lesser scaup
wood duck*	Canada goose	ring-necked duck
gadwall	common merganser	American wigeon
bufflehead	hooded merganser	northern shoveler
northern pintail		

* National Resource Species

The Wallkill River bottomlands were once an important area for the northern pintail, an early migrant. With the planned habitat enhancement of the former Liberty Sod Farm (see Section F.2) and improved wetland habitat management, the refuge hopes to attract this species during migration again.

Nesting species are believed to include the black duck, mallard, green-winged teal, blue-winged teal, wood duck, pintail, hooded merganser, common merganser, and Canada goose.

4. Marsh and Water Birds

A series of birders on the refuge for the World Series of Birding on May 11, 1996 sighted American bittern, least bittern, and Virginia rail in refuge wetlands. Great blue heron, green heron, black crowned night heron, great egret, and snowy egret have been seen on the refuge.

5. Shorebirds, Gulls, Terns, and Allied Species

Greater and lesser yellowlegs, solitary, spotted and semipalmated sandpipers, snipe and woodcock are common migrants on the refuge. Killdeer are common and nest on the refuge. American woodcock use the refuge during migration; some birds also nest on the refuge, although the population of breeding woodcock is unknown.

6. Raptors

A variety of raptor species utilize refuge habitat resources for nesting and/or feeding. The great horned, barn, short-eared, and screech owl are known to have nested on or near the refuge acquisition boundary. Long-eared and saw-whet owls are winter migrants.

Red-tailed hawks, American kestrels, and northern harriers are the most predominantly sighted raptors, most likely because they are resident species. Other raptors include the sharp-shinned hawk, goshawk, rough-legged hawk, broad-winged hawk, and merlin. Turkey vultures and black vultures use the refuge.

7. Other Migratory Birds

Volunteer Monica Juhasz completed a trial land bird count on refuge land in March 1995. This was the first attempt to initiate a biological survey on the refuge.

The refuge provides important nesting and migratory habitat for many passerines and upland bird species of management concern in the northeast. Birds recorded on the refuge by BST Gore and SCA Resource Assistants George and Aurora Roberts are listed below. This is by no means a complete accounting of other migratory birds using the refuge, but just those recorded by refuge staff and volunteers during the summers of 1995 and 1996.

Ruffed grouse.
Northern bobwhite
Cooper's hawk
Sharp-shinned hawk
Northern harrier
Red-tailed hawk
Broad-winged hawk
Turkey vulture
Black vulture
American kestrel
Barred owl
Great horned owl
Rock dove
Mourning dove
Chimney swift
Black-billed cuckoo
Yellow-billed cuckoo
Ruby-throated
 hummingbird
Belted kingfisher
Red-headed woodpecker
Pileated woodpecker
Northern flicker
Red-bellied woodpecker
Downy woodpecker
Hairy woodpecker
Eastern kingbird
Great crested flycatcher
Eastern phoebe
Eastern wood-pewee
Least flycatcher
Willow flycatcher
Alder flycatcher
Purple martin
Cliff swallow
Barn swallow
Tree swallow
Bank swallow
Northern rough-winged
 swallow
American crow
Blue jay
Black-capped chickadee
Tufted titmouse

White-breasted nuthatch
Brown creeper
House wren
Carolina wren
Marsh wren
Blue-gray gnatcatcher
Brown thrasher
Gray catbird
Northern mockingbird
Eastern bluebird
American robin
Swainson's thrush
Veery
Wood thrush
Cedar waxwing
Red-eyed vireo
Warbling vireo
Yellow-throated vireo
White-eyed vireo
Solitary vireo
Blue-winged warbler
Northern parula
Common yellowthroat
Yellow warbler
Prairie warbler
Chestnut-sided warbler
American redstart
Worm-eating warbler
Ovenbird
Northern waterthrush
Scarlet tanager
Red-winged blackbird
Rusty blackbird
Brown-headed cowbird
Common grackle
Bobolink
Eastern meadowlark
European starling
Orchard oriole
Baltimore oriole
Scarlet tanager
House sparrow
Dickcissel
Northern cardinal

House finch
American goldfinch
Rose-breasted grosbeak
Indigo bunting
Rufous sided towhee
Field sparrow
Chipping sparrow
Swamp sparrow
Grasshopper sparrow
White-throated sparrow
Henslow's sparrow
Song sparrow
Savannah sparrow
Vesper sparrow

At the Galeville Airport site in Ulster County, New York, Henslow's sparrow, yellow-breasted chat, savannah sparrow, meadowlark, and bobolink were seen or heard on June 13, 1996.

8. Game Mammals

Furbearers of economic importance inhabiting the refuge include beaver, muskrat, mink and raccoon. Muskrat and beaver are plentiful along the Wallkill River and its tributaries.

9. Marine Mammals (Nothing to Report)

10. Other Resident Wildlife

Numerous small mammals such as voles, shrews and mice are common in the upland fields and shrub habitat types. These small mammals form a large component of the raptor forage base in the local area.

Black bear and bobcat are also known to occur occasionally on the refuge. It is felt that animals sighted are usually transitory, traveling between large wooded areas lying to the east and west of the refuge. Black bear populations are on the increase, though, and should become more frequently seen in the future.

River otters were observed in 1995.

The number of wild turkey seen on the refuge is astounding. It is not uncommon to see large flocks of wild turkeys daily. Turkey are found throughout the refuge

Reptiles and amphibians observed during this period include eastern milk snake, eastern garter snake, painted turtle, box turtle, spotted turtle, snapping turtle, bullfrog, spring peepers, wood frog.

11. Fisheries Resources

Papakating Creek, a tributary of the Wallkill River, is classified as trout maintenance down to the Route 629 bridge in Frankford Township. It is classified as nontrout for its remaining length down to its confluence with the Wallkill River. The classification of the waters within the refuge acquisition boundary is therefore considered nontrout. The Wallkill River does, however, support a warmwater fishery for largemouth bass, pickerel, perch, sunfish and bullhead.

12. Wildlife Propagation and Stocking

Three saw whet owls were released on the refuge on April 18, 1996. The owls had been rehabilitated by Giselle Smisko of the Avian Wildlife Center in Wantage, New Jersey. Two of the owls had been hit by automobiles and one had been found in a dumpster.



RM Libby Herland holds saw whet owl that was released on the refuge after rehabilitation by Avian Wildlife Center. *G. Smisko 4/96*

On August 15, 1996, Giselle Smisko of the Avian Wildlife Center staff released a rehabilitated great blue heron in the wetlands along the abandoned railroad bed on Tract 86.

13. Surplus Animal Disposal (Nothing to Report)

14. Scientific Collections (Nothing to Report)

15. Animal Control (Nothing to Report)

16. Marking and Banding

Refuge staff and volunteers assisted the New Jersey Department of Environmental Protection and Energy in goose banding efforts throughout northern and central New Jersey on several days in 1995 and 1996. No birds were banded on the refuge.

The New Jersey Division of Fish, Game and Wildlife set up traps on the refuge in June, 1995 trying to determine the presence of bog turtles, a candidate for protection under the Federal Endangered Species Act. No turtles were found at the various locations. One site off of Stratfordshire Road that had seemed to have potential was determined to be too wooded. The area is a red maple swamp.

In late August 1996, refuge volunteer Christian Seal assisted Kevin Holcomb of the NJ Division of Fish, Game and Wildlife clear a site to set up dummy rockets to trap waterfowl for banding purposes. Volunteer Seal and MW Mitchell baited the traps for two weeks but were not successful in capturing any ducks.

17. Disease Prevention and Control (Nothing to Report)

H. PUBLIC USE

1. General

Historically, consumptive recreational uses of the Wallkill River valley's natural resources included waterfowl and deer hunting with a limited amount of trapping. Fishing activities were limited because of restricted and/or lack of access.

Current non-consumptive recreational uses on parcels within the acquisition boundary include canoeing, wildlife observation, bicycling, photography, horseback riding, ATV use, cross-country skiing, and snowmobiling.

Regional Visitor Services Coordinator Tom Comish visited the refuge on September 12 -13, 1995. RM Herland and ROS Robichaud toured several sites with him and discussed public use opportunities on the refuge. On December 11-12, 1995, Regional Office Landscape Architect Pam Rooney visited several potential public use sites and subsequently developed parking lot layouts for hunting and river access. RM Herland applied for and received road opening permits from the Sussex County Engineering Office for the parking lots on Bassetts Bridge Road and Route 565.

Currently, the only public use allowed on the refuge is deer hunting. RM Herland worked on the Outreach and Visitor Services Plan, Environmental Assessment and compatibility determinations in 1996. Planned uses to open during 1997 include wildlife observation trails, environmental education, beaver and muskrat trapping, spring turkey hunting, canoe access sites, and fishing access.

2. Outdoor Classrooms - Students

ROS Robichaud discussed the refuge, the National Wildlife Refuge System, compatibility and wildlife management issues to 15 students from Orange County Community College. The class was held at Bassett's Bridge on April 13, 1995.

"Cargo for Conservation" was the topic of RM Herland's presentation to 450 6th grade students at Orange County Conservation Days on September 27-28, 1995. The topic was "Cargo for Conservation". This event is held at the Thomas Bull Memorial Park in Montgomery, New York.



ROS Robichaud at Orange County Conservation Days *FWS 9/96*

ROS Robichaud and Volunteer Jim Fitzsimmons continued the representation of the refuge at Orange County Conservation Days when she presented 8 programs to over 500 6th-graders on September 24-25, 1996. The topic in 1996 was, once again, "Endangered Species".

ROS Robichaud presented a slide program about the refuge and wildlife to over 400 6th and 7th graders at the Lake Fairview YMCA camp on March 18 and 20, 1996.

On October 10, 1996, ROS Robichaud gave an outdoor program at the former Liberty Sod Farm to 30 Warwick Valley High School students about our proposed public use program and the restoration of the sod farm.

3. Outdoor Classrooms - Teachers

On October 5, 1996, Paul Osmer of the Vernon School District taught a Project Wet workshop in the refuge's Owens Station Education Building. Twelve local teachers attended.

4. Interpretive Foot Trails

SCA Volunteers George and Aurora Roberts assessed the potential for public use by foot and canoe on the refuge. In particular, they walked the abandoned New York, Susquehanna, and Western railroad from Rt. 565 south to Scenic Lakes Road. Their report showed the potential for the development of this area as the refuge's first nature trail.

Regional Office representatives Duncan Creaser (Engineering), Ann Marie Bowker (Contracting and General Services) and Will Waldron (Realty) met with RM Herland on May 23, 1996. They walked the two abandoned railroad beds on the refuge to determine

construction needs and costs associated with the upgrade of these 2 beds for use as wildlife observation trails. Funding from the U.S. Department of Transportation's Public Lands Program was sought for parking lot construction, culvert replacement, water control structure installation, bridge repair, foot bridge construction, regrading, vegetation clearing, gates and signage. Although the funding was not received, the information prepared by Duncan Creaser was subsequently helpful in other work that was performed by refuge staff and volunteers.



Will Waldron, Duncan Creaser and Libby Herland discussing bridge repair.
A.M. Bowker 5/96

5. Interpretive Tour Routes (Nothing to Report)
6. Interpretive Exhibits/Demonstrations

On May 13, 1995, the refuge hosted an International Migratory Bird Day Celebration with information tables from the Wallkill River NWR, Great Swamp NWR, NJFO, Avian Wildlife Center (a local rehabilitator), slide shows, videos, bird walks, a migratory bird poster contest, and a guest speaker from the Avian Wildlife Center. Sixty people were in attendance. This was the first event open to the public hosted by the refuge since the refuge's dedication ceremony in 1992.



Giselle Smisko of the Avian Wildlife Center answering questions during International Migratory Bird Day event. *FWS 5/95*



SCA volunteer Aurora Roberts at Sussex County Farm and Horse Show. *G. Roberts 8/95*

From August 4-13, 1995, a refuge exhibit and information table was displayed at the Sussex County Farm and Horse Show. Refuge staff, Great Swamp NWR staff, and refuge volunteers staffed the table during the 10-day fair. Over 2,000 individuals stopped to look over the exhibit, take brochures and informational leaflets, and talk with refuge staff and volunteers.

On March 25, 1996, the refuge participated in the Governor's Council on Tourism convention held in Vernon, New Jersey. The refuge's tabletop exhibit was displayed with other Vernon area attractions. Approximately 300 persons were in attendance, including New Jersey Governor Christine Todd Whitman.

The refuge participated in its first Earth Day celebration on April 20, 1996. The celebration was held at the Rickey Farm in Vernon Township. About 50 people attended, viewed the refuge exhibit, and learned more about the refuge from RM Herland.

An International Migratory Bird Day Celebration was also held in 1996. Giselle Smisko from the Avian Wildlife Center was again the guest speaker. Exhibits and/or informational handouts were provided by the refuge, Pequest Fish Hatchery, High Point State Park, Wawayanda State Park, and Stokes State Forest. Bird walks, a slide show, and videos rounded out the day.

Refuge staff and volunteers once again worked a display at the Sussex County Farm and Horse Show from August 2-11, 1996. Participation in this event, while time consuming for staff and volunteers, has proven to be an excellent forum for informing the public about our existence and our mission.

7. Other Interpretive Programs

A total of 2,222 individuals were reached through programs given in 1995 and 1996. The Refuge's Cargo for Conservation endangered species props were used extensively. The endangered species parts and products were very well received by even the most impatient students. Of the 64 presentations given, 49 used Cargo for Conservation, with 1,469 individuals receiving the endangered species message. Other program topics included the Wallkill River NWR, the National Wildlife Refuge System, and careers in conservation.

On March 10 and March 27, 1995, ROS Robichaud presented "the National Wildlife Refuge System, Wallkill River NWR, and Endangered Species: in one and a half hour blocks to four different Language Arts classes (approximately 100 students) at the Glen Meadows School in Vernon, New Jersey.

On April 11, 1995, ROS Robichaud provided information about the refuge and "Cargo for Conservation" to 40 students from the Pine Island Junior Historical Club. Renee was voted most popular presenter for the years by the club members.

ROS Robichaud presented "Cargo for Conservation" to 110 7th-grade students from Port Jervis Middle School on June 15, 1995.

On July 15, 1995, a record hot day (108 degrees) in Sussex County, the refuge hosted a Russian delegation of reserve managers and defense ministers as part of a two-week northeast tour organized by Steve Kohl of the Service's Office of International Affairs. This tour was a workshop on management of civilian and military protected areas in the northeast United States. Guests included Andrew Katz, Wantage Township Administrator; Paul DeCoste, Appalachian Trail Conference; and Dennis Miranda, New Jersey Conservation Foundation, who led a morning bird walk. Several of the Russians commented that, of all the protected areas they had seen in the United States, they could most closely identify with the Wallkill River Refuge from the standpoint of budget and available resources. SCA Volunteers George and Aurora Roberts organized the agenda for the visit and contributed significantly to the success of the Russian visit.

ROS Robichaud talked about endangered species and used material from "Cargo for Conservation" to 200 second graders from Cedar Mountain School in Vernon. These presentations occurred on September 21 and 22, 1995.

On October 6, 1995, RM Herland presented an endangered species program to eight Cub Scouts. The group also visited Tract 24 and picked up garbage at that location.



On October 9, 1995, Volunteer Dennis Miranda led a bird walk on the refuge to celebrate National Wildlife Refuge Week 1995. Seventeen persons participated. *L. Herland 10/95*

RM Herland introduced the refuge to 30 seniors from the Vernon Chapter of the American Association of Retired Persons at the Vernon Senior Center on October 12, 1995.

On November 13, 1995, ROS Robichaud presented "Cargo for Conservation" to 4 cub scouts and parents at the Owens Station Environmental Education facility. On November 28, 1995, she presented the same program to 11 cub scouts, siblings and parents in Vernon.

RM Herland spoke to 15 members of the High Point Republican Club on November 13, 1995 about the refuge. This was a skeptical audience of business people who were not friendly, but did not express outright opposition to the refuge. This was the first of many outreach programs to be conducted by RM Herland within the established "power structure" of Sussex County.

RM Herland spoke to 40 members of the Sussex County Bird Club about the refuge on November 17, 1995. The members of the club were not pleased that the refuge is still closed to all public use other than deer hunting at this time.

RM Herland gave a presentation to 30 members of the Fredon (NJ) Senior Citizens Club during the week of November 18, 1995.

ROS Robichaud presented information about endangered species and "Cargo for Conservation" to 24 students at the Rolling Hills Elementary School in Vernon on December 5, 1995.

RM Herland gave her first presentation to a local school group on December 12, 1995 when she spoke about the refuge to 75 students in the Sussex Middle School Environmental Club.

On February 20, 1996, RM Herland gave a talk about the refuge and environmental careers to the Cook College (Rutgers University) Wildlife and Conservation Club.

On February 23, 1996, ROS Robichaud and Volunteer Laura Schmitter gave a program on "Cargo for Conservation" to about 50 11th and 12th grade students at Warwick High School.

RM Herland participated in "Career Paths for Women" at the Sparta High School on March 16, 1996. She spoke to over 100 young women on conservation as a career.

On March 17, 1996, the refuge co-sponsored a bird walk with the Sussex County Bird Club to celebrate the National Wildlife Refuge System's birthday.

ROS Robichaud presented a program about the refuge to 20 students at the Newton High School Environmental Science club on April 18, 1996.

RM Herland gave a presentation about the refuge to 7 members of the North Jersey Chapter of the Sierra Club in Englewood, New Jersey on May 9, 1996.

RM Herland gave a presentation about the refuge to 15 members of the Milford-Matamoras Rotary Club on July 23, 1996.

ROS Robichaud presented information about careers in the Service to 50 Delaware Valley (PA) High School juniors and seniors on September 19, 1996.

8. Hunting

Due to limited staff, the refuge held a low maintenance hunt without refuge hunt permits or check stations on the refuge. All tracts of the refuge except for the former Liberty Sod Farm were made open to all deer hunters with proper NJ licenses and Zone 2 permits. The refuge was open only for New Jersey's Zone 2 extended season permits, not for the standard New Jersey State seasons.

Deer hunting and scouting at the refuge during 1995 and 1996 were open as follows (except there is no hunting on Sundays in New Jersey):

TABLE 15. HUNTING SEASONS 1995/1996		
Season	1995	1996
Deer (bow)	November 11-December 2	November 2-30
Deer (shotgun)	January 20-21, January 27-28, December 13-15	December 18-20
Deer (muzzleloader)	December 11, 12, 16, 18-23, 26-30	January 15-26, December 2, 3, 16, 17, 21, 23-31

The muzzleloader season was closed during December 18-23 and 26-30, 1995 due to the federal government shutdown because of the Fiscal Year 1996 budget impasse. Many hunters were inconvenienced by the hunt closure. Several had taken leave from work specifically to hunt the refuge, which is the only public hunting area in New Jersey Deer Management Zone 2. The shutdown was particularly difficult for the public to understand due to the small staff size at the refuge. With only two staff members, both of whom were deemed essential staff, to the outsider the refuge appeared to be operating as status quo, even though we were officially shut down. From January 15-26, 1996, the refuge opened for a special extended muzzleloader season to replace the days lost during the federal government shutdown.

9. Fishing

The refuge was not open to public fishing in 1995 and 1996. However, Volunteer Greg Gelewski gathered information about public fishing regulations and sites for use in planning future fishing access.

10. Trapping (Nothing to Report)

11. Wildlife Observation

The first draft master bird list for the refuge was completed in February 1996 by Volunteer Laura Schmitter. It was revised by Student Trainee Gore and submitted to the Regional Office for printing on July 29, 1996.

RM Herland wrote a challenge grant request in February 1996 for \$2000 for the development of parking lots at the future Wood Duck Nature Trail and the Bassetts Bridge fishing and canoe access point. This funding, which was approved by the Regional Office, was a major step in being able to provide visitors with an opportunity to observe wildlife on the refuge.

12. Other Wildlife Oriented Recreation

A compatibility determination finding that field retriever trials were a compatible use on the refuge was approved.

13. Camping (Nothing to Report)

14. Picnicking (Nothing to Report)

15. Off-Road Vehicling

Use of the refuge by mountain bikes, dirt bikes, all terrain vehicles and snowmobiles is not authorized. The illegal use of the refuge by dirt bikes and ATVs was a serious problem during this period.



Youngest dirt biker rider seen to date. Brought to the "sand pits" by his father. *L. Herland*
4/95

16. Other Non-Wildlife Oriented Recreation

On May 26, 1995, a letter was forwarded to Congressman Rodney Frelinghuysen regarding the RC Solo Model Airplane Club. The Club indicated their wishes to use the former Liberty Sod Farm to fly their model airplanes, however a compatibility determination completed for the model airplane use on the refuge found the use incompatible. A separate letter was sent to a representative of the club by RM Herland, explaining that the sod farm would not be available for their use. A third letter on this subject was sent to Senator Bradley in August 1995.

During November 1996, RM Herland prepared a response to a Congressional inquiry from Senator Alfonse D'Amato of New York State regarding our position to discontinue model airplane flights at the Galeville Airport site, should that excess military site be transferred to the Service as a unit of the Wallkill River NWR. Pressure from model airplane organizations to allow this activity on areas which might become part of the National Wildlife Refuge System has been consistently high for the past year. RM Herland had conversations with several model airplane enthusiasts in 1996.

17. Law Enforcement

The following Refuge Officers assisted the refuge during the deer hunt seasons:

TABLE 16. ASSISTING OFFICERS 1995/1996 DEER HUNTS		
Officer	Station	Dates
Tara Donn	Newark Law Enforcement	1/20/95
Dorothy Wertheim	Newark Law Enforcement	1/21/95
Tom McFadden	Great Swamp NWR	1/27-28/95, 12-8-9/95, 12/12-13/96
Charlie Hebert	Ninigret NWR	11/18/95
Graham Taylor	Rachel Carson NWR	12/4-5/95
Mike McMenamin	John Heinz NWR at Tinicum	12/6-7/95, 12/9-11/96
Bill Kolodnicki	Long Island NWR Complex	12/8-9/95
Bruce Marto	Long Island NWR Complex	12/8-9/95
Tom Provost	Patuxent Research Refuge	12/13-16/95
Steve Wunderley	National Refuge LE Coordinator	12/14-15/95
Paul Casey	Stewart B. McKinney NWR	12/30/95, 12/18-20/96
Don Lima	Stewart B. McKinney NWR	12/30/95, 12/18-20/96

Mark McGee	Chincoteague NWR	11/2/96
Bob Snow	Chincoteague NWR	11/2/96
Christopher Husgen	Parker River NWR	11/7-9/96

Refuge staff began receiving calls in March 1995 about illegal all terrain vehicle use on the newly acquired Tract 24 (Raia property). ATV use increased with the spring weather and adjacent landowners expected the refuge to take some kind of action. RM Herland began site visits in late afternoons and stopped many ATV riders to tell them they were not allowed to be on the property. The previous owners had tolerated ATV use, so this was an unwelcomed change for many individuals. One afternoon, RM Herland was confronted by 7 ATV riders in April 1995; fortunately there were no serious ramifications, but the incident highlighted the need for law enforcement on the refuge. Illegal ATV use of the refuge was the most serious law enforcement issue on the refuge in 1995 and 1996.

Several disturbing law enforcement incidents occurred on the refuge during 1995. On one tract, boundary signs were vandalized by graffiti of a "hate crime" nature. Local law enforcement was notified. A Pepsi can that had been converted to a pipe for smoking illegal substances (either marijuana or crack cocaine) was found by RM Herland and Charlie Hebert in a refuge parking area. The eviscerated carcasses of two deer were found, antlerless, in the same parking area.

On July 6, 1995, RM Herland spent the day with Senior Resident Agent John Meehan from the Newark Law Enforcement Office. The day included a tour of the refuge and discussions regarding enforcement problems at the refuge: all-terrain vehicle use, partying, and model airplane use.

During 1995 the sod farm was plagued by low flying (less than 500 feet) airplanes and helicopters. One helicopter actually landed on the sod farm. ROS Robichaud and Volunteer Rich Calamusso spoke with the pilot at the State Line Road heliport. The student pilot and his instructor were unaware of the refuge's existence. They agreed to spread the word to other pilots in the area.

During the summer of 1996, MW Mitchell constructed and installed pipe gates at Kelly Road, railroad bed access off Rt 565, Tracts 57, 74, on Scenic Lakes Road, and the railroad bed access off Bassetts Bridge Road.

On November 18, 1996, MW Mitchell began Basic Officer Training for Land Management Agencies at the Federal Law Enforcement Training Center in Glynco, Georgia.

18. Cooperating Associations (Nothing to Report)

19. Concessions (Nothing to Report)

I. EQUIPMENT AND FACILITIES

1. New Construction

During October 1996, Wantage Township, Vernon Township, the New Jersey Forest Fire Service, and Richard L. Dunn Excavating donated their equipment, time and staff to assist the refuge in preparing three parking areas for future public access. The parking areas were located on Rt. 565 just north of Rt. 23 in Wantage Township, Bassetts Bridge at the Wallkill River (Wantage Township), and Bassetts Bridge Road (Rt. 665) at the abandoned Lehigh and New England railroad bed in Vernon, New Jersey.



New Jersey Forest Fire Service, Harold Lott (middle), Jason Van Olson (right), offered their equipment and assisted MW Terry Mitchell with preparing the Wood Duck Nature Trail parking lot. *L. Herland 10/96*

Refuge neighbor Len Dujets offered to develop a hunter parking area just off Kelly Road near the intersection with Lake Wallkill Road. He has experienced considerable disturbance at his weekend residence from hunters parking near the abandoned railroad bed. This work was done in September 1995 over the course of several weekends at no cost to the refuge.

2. Rehabilitation

On January 10, 1995, Architect/Civil Engineering Technician Liz Dawson visited the refuge to assist with 504 Accessibility plans for the proposed new office site. The previous refuge manager, Sylvia Pelizza, had considered relocating the office from the 500-square foot tenant farmhouse at 376 Rt. 284 to the recently acquired farmhouse located on Tract 57 (the former Lott Farm house). The purpose of Ms. Dawson's visit was to determine

modifications that would be needed to bring the building into compliance for accessibility. On February 7, 1995, Regional Safety Officer Ed Bajakian conducted a safety assessment of the building. Ms. Dawson's determination that modifications would cost at least \$57,000, along with concern expressed by Mr. Bajakian that the building had structural issues and by RM Herland that the building was not large enough for a refuge headquarters, changed the projected use of the building from office to residential.

Throughout 1995 and 1996, Volunteer Rich Calamusso worked on renovations of quarters 2 (the former Lott Farm house). Volunteer Calamusso stabilized the basement beams, replaced four windows, installed a new roof on the oldest portion of the house, removed the plaster and lathe walls, installed sheetrock and painted the bedroom, dining room and laundry room, painted kitchen cabinets, installed a new formica counter and sink, sanded and polyurethaned the living room hardwood floor, and created a walk-in closet. Electrical upgrades were made by a local electrician.

On February 5, 1995, RM Herland and ROS Robichaud met the Van Althuis family and inspected the house and an outbuilding for the presence of asbestos. The family home, which has been divided into 3 apartments, would be large enough to serve as the refuge office after renovation. On February 13, 1995, ROS Robichaud and Volunteer Rich Calamusso visited the farmhouses on Tract 23 and 52 and determined that the Van Althuis house on Tract 23 was more structurally sound and would be a preferred office location.

In March 1995, RM Herland met with the former owners of the West Valley Sports Club (Tract 51) to learn more about the mechanical operations of the buildings on this site. The property contained a very large in-ground swimming pool which needed to be demolished as it was in poor repair and was a major safety liability. Other than that concern, the large building on the site, known as the pavilion was determined to be an excellent facility for public use.

Improvements needed to bring the electrical system at the "Owens Station Education Building" up to code were made in September 1995 by local electrician Joe Klecha. RM Herland arranged to use the \$20,000 for ADA-accessibility upgrades which had been targeted to the Lott Farm House at this facility instead. The renovations began on December 4, 1995. A concrete walkway was installed and the main entrance door and the bathrooms were made wheelchair accessible. On March 16, 1996, John Nicely and John Arnold of the Great Swamp NWR assisted refuge staff by painting the concrete floor of the Owens Station Education Building. Donated excess furniture and equipment was moved into this building in March 1996 and the building was converted to office space for MW Mitchell, Student Trainee Gore, and refuge interns during the summer of 1996.

Jeff Graves of Iroquois NWR spent two weeks on the refuge, beginning August 28, 1995, installing gates, posting signs, filling in the swimming pool at the former West Valley Sports Club, and assisting with quarters renovations.



Maintenance Worker Jeff Graves demolished the swimming pool at the former West Valley Sports Club (tract 51) in two days. *L. Herland 8/95*

Harold Lott, a firewarden with the New Jersey Forest Fire Service, used NJFFS equipment on November 2, 1995 to regrade the access roads at 119 Owens Station Road. This greatly facilitated both our use of the property and fire suppression efforts.

ROS Robichaud wrote a request for funding to repair storm damage from the April 1996 snowfall. \$50,000 was approved which will be used to repair the roof on the Owens Station Environmental Education Center.

MW Mitchell replaced all the windows in the Owens Station dormitory with new, double-hung energy efficient windows.

3. Major Maintenance

The well pump and pipe at the refuge office was replaced on February 15, 1996.

In May 1996, refuge neighbor Charles Baker was awarded salvage rights for the garage and sheep shed on Tract 79. These buildings were removed during the summer.



Tract 79 building to be salvaged by Charles Baker in 1996. *L. Schmitter 3/96*

Asbestos was abated from the barn on tract 74 at 190 Lower Unionville Road in 1996. Work was completed by D&S Restoration.

4. Equipment Utilization and Replacement

During 1995, various heavy equipment was rented for the Liberty Sod Farm Restoration, including a John Deere 450 Dozer and a John Deere 190E Excavator, both rented from G&H Services of Newton, NJ, and a 60hp tractor and bush hog. Additionally, a John Deere 550 Dozer was rented for use on Tract 24.

During December 1995, refuge parking signs were stolen from the hunt parking area on Kelly Road. This was the first year that the signs were erected. The cost of the two signs was \$256.00 and the posts were approximately \$15.00 each.

On March 18 and 19, 1996, RM Herland and Volunteer John Buck picked up the following equipment from Law Enforcement in Concord, New Hampshire, Green Lake National Fish Hatchery, and Parker River NWR: 2 office desks, 1 table, 1 pick-up truck, 1 10-foot snowplow, 1 386 computer, radios and a skilsaw.

During May 1996, the refuge acquired a used Jeep Cherokee from the NJFO, a copy machine from Cape May NWR, a desk and file cabinet from Newark Law Enforcement, a color printer and overhead projector from the Delaware Bay Estuary Program Office, and several desks from the New York Field Office.

A gasoline-powered John Deere tractor was transferred to the refuge from Iroquois NWR on October 8, 1996.

5. Communication Systems (Nothing to Report)
6. Computer Systems (Nothing to Report)
7. Energy Conservation (Nothing to Report)
8. Other

Permission was sought and received to remove a number of decrepit buildings on the refuge. This included the concrete silo and small barn on Tract 51, three barns and 1 attached shed on Tract 74, three barns and 1 shed on Tract 79, 1 spring house on Tract 86 and 1 metal silo on Tract 114 (now 15d). The Regional Archeologist had determined these buildings were without any historical significance. Most of these buildings were then made available to the public for salvage.



Tract 74 barn that was demolished by Maintenance Worker Terry Mitchell later in 1996.
L. Schmitter 3/96

I. OTHER ITEMS

1. Cooperative Programs

RM Herland joined the Hudson River/New York Bight Ecosystem Team as its newest member in early 1995, after having served as the facilitator since the team's inception in 1994. From October 1995 to September 1996, she served as the team leader.

During the summer of 1995, RM Herland worked with both Wantage Township and the Vernon Township Planning Board to develop support for ecotourism in the Wallkill Valley, and the role the refuge could play in being a factor in the local community. Opening the

refuge to wildlife-oriented public uses will greatly improve our acceptance with residents and local officials.

The refuge staff worked closely with Andrew Milliken of the Southern New England/New York Bight Coastal Ecosystems Program in the review of the draft report entitled "Regionally Significant Habitats and Habitat Complexes of the New York Bight Watershed". This in-depth report provided considerable information about ecologically significant areas in the watershed, including the Wallkill Valley area and the Shawangunk Ridge and Valley area. This document proved to be an extremely useful reference document for refuge planning.

RM Herland worked closely with the National Park Service, the Appalachian Trail Conference, and the New York-New Jersey Trail Conference as a member of the New Jersey Appalachian Trail Management Committee. Issues involving a possible footbridge across the Wallkill River, development of a Memorandum of Understanding with the Service, revision of the New Jersey Appalachian Trail Management Plan to reflect the establishment of the refuge, and our proposed water management activities at the former sod farm were highlights during this period..

2. Other Economic Uses (Nothing to Report)

3. Items of Interest

The 1993 Annual Narrative Report was finished in March 1995.

Refuge staff responded to many requests for information about the refuge from authors and reporters. In February 1995, information was provided to Mark Damian Dud of Responsive Management for his new book "Watching Wildlife: A Complete Guide to One of American's Most Popular Outdoor Activities". A profile of the refuge staff was completed by Sherry Karasik of the New Jersey Herald for the March 1995 special feature on women. The fact that this was an all-female staff really sparked the attention of the editors!



In July 1995, information was provided to Eugene Walter for the Smithsonian Guide to Natural Areas in the Mid-Atlantic.

4. Credits

This report was written by RM Herland, ROS Robichaud, and OA Stephenson.

K. FEEDBACK

By 1995, the refuge had acquired a couple of thousand acres of land and staff had been in place for 4 years. RM Herland came to the refuge in January 1995 and quickly established 4 areas of emphasis: 1) increase infrastructure - staff and equipment - to manage the refuge; 2) continue to acquire land at a steady pace and build rapport with willing sellers; 3) establish a biological program; and 4) develop a public use program.

Getting a new refuge off the ground is not easy. In 1995, there was no pot of money for new or expanded refuges. Every dollar that went to the Wallkill River NWR came from another refuge, and there was some resentment about that. Nevertheless, our pleas for equipment were answered. We did develop our infrastructure - by the end of 1996 we had a maintenance person - but virtually everything on our personal property list was a hand-me-down from the regional office or another refuge. At least we could say that our largest piece of heavy equipment was no longer a riding lawn mower!

Providing opportunities for public use on the refuge proved to be a divisive issue on the refuge, yet it turned out to be the key to building community understanding and support for the refuge. By the end of 1996, municipal officials knew about the refuge and were acting to support our land acquisition efforts, as was the conservation community.

I cannot overstate the importance of the support provided to me by the Regional Office as we worked to expand the refuge, establish a public use and habitat restoration program, and increase staff. The successful accomplishment of our mission was greatly facilitated by Regional Office Refuges and Wildlife and Realty staff. All have been a pleasure to work with.